

**METHOD FOR PROMOTING REGENERATION OF SURFACE CARTILAGE IN A  
DAMAGED JOINT USING MULTI-LAYER COVERING**

**BACKGROUND OF THE INVENTION**

[0001] This application claims the benefit of provisional application Serial No. 60/224,010, filed August 10, 2000. This application also is a continuation-in-part of U.S. Serial No. 09/545,465, filed April 7, 2000, which is a §371 of PCT/GB98/02976, filed October 5, 1998.

**FIELD OF THE INVENTION**

[0002] The present invention relates to the field of promoting regeneration of surface cartilage in damaged joints.

**DESCRIPTION OF THE BACKGROUND ART**

[0003] In view of the large number of joint injuries, such as knee injuries, which take place yearly, a number of therapies have been developed in an effort to promote regeneration of damaged cartilage. Typical methods involve introduction of chondrocytes from an outside source into the damaged area to promote cartilage regeneration.

[0004] For example, in accordance with one method, a cartilage biopsy is surgically removed from the patient and sent to a laboratory, where the patient's chondrocytes are isolated from the cartilage and the chondrocyte cells are reproduced in culture. Later, another surgery is performed on the patient wherein the damaged cartilage area to be treated is debrided back to expose healthy cartilage, leaving the subchondral bone plate intact. A periosteal patch is taken from the proximal medial tibia of the patient, and this periosteal patch is sutured to the rim of the healthy cartilage surrounding the area to be treated. The cultured chondrocytes reproduced from the cells previously taken from that patient then are injected under the patch into the defect, and the injury is allowed to heal.

[0005] U.S. Patent No. 5,759,190 discloses another method, wherein a hemostatic barrier is placed proximal to the surface to be treated, chondrocytes in a matrix are placed upon the surface to be treated distal to the hemostatic barrier, and then the matrix is covered with a patch.

[0006] There remains a need in the art for improved methods of promoting regeneration of surface cartilage in damaged joints.